M/037/0088
cc: Mike
Wayne
Task: 5772

RECEIVED E-Mail
DEC 18 2013
Div. of Oil, Gas & Mining

LISBON VALLEY MINING CO

Ms. Rebecca Doolittle
US Bureau of Land Management
82 East Dogwood
Moab Utah 84532

December 3, 2013

Comment [LI1]:

Mr. Wayne Western
Utah Division of Oil, Gas, & Mining
1594 West North Temple Suite 1210
Salt Lake City, UT 84114-5801

Re: Large Mining Operations Reclamation Bond Estimate
Lisbon Valley Mining Co., DOGM File M/037/088

Dear Becky and Wayne:

The Lisbon Valley Mining Co., LLC (LVMC) has prepared the attached reclamation bond package in accordance with the results of the meeting conducted 10-19-13. A documentation of the meeting is included here for background.

October 19, 2013 Meeting Agenda

LVMC intended the meeting to be a working session. In attendance were Paul Baker (DOGM), Mike Bradley (DOGM), Wayne Western (DOGM), Rebecca Doolittle (BLM), Ken Ezpeleta (LVMC), and Lantz Indergard (LVMC).

The objective was to present the current mine expansion, compare this with conditions in 2009, and frame the 2013 estimate. LVMC prepared for the meeting by printing copies of the spreadsheet used to authorize the bond in 2009, editing this spreadsheet to reflect current changes, and preparing an aerial site map. The meeting included a review of the site map, mine tour, and work session.

The following changes were presented.

- Expanded Waste Dumps B and C
- Additional ore on leach pad
- Elevated haul road/waste rock stockpile
- Topsoil stockpiles
- Clay stockpiles
- Concurrent reclamation on Dumps B and C
- Reclamation of primary crusher
- Expanded haul road from the GTO pit

Approved 2009 Bond Spreadsheet

As stated, LVMC reflected these changes on the same cost spreadsheet DOGM used to approve the bond in 2009. Both the approved (2009) version and the proposed (2013) version were distributed as hand out material. LVMC's intent was to go through each line item of the spreadsheet and review changes in accordance with the mine expansion presented the same day.

The 2013 version reflected a 50% unit cost reduction for stockpiling clay and waste rock next to the leach pad for final reclamation purposes. LVMC corroborated this change during the site tour as a function of documented real time truck and loader cycle times. The remaining unit costs (topsoil) remained unchanged.

Extended Leach Pad Drain Down

The group discussed the efficacy of converting the storm water pond to a wetlands cell to facilitate long-term heap leach drain down. Since it is not known when the drain down period will go to zero, LVMC proposed an alternative to treat minor long term seepage from the pad using artificial wetlands treatment. This would mean leaving the storm water pond in place. LVMC intends to resume the discussion over time.

Unit Costs for Earthmoving

The work session ended after DOGM recommended a re-evaluation of the historically-approved unit costs for earth moving. BLM agreed with DOGM's recommendation, and expressed additional recommendations to revise the method of calculating indirect costs.

The earth moving costs questioned by DOGM are the same primary unit costs (soil, clay, and rock) used to approve the bond in 2009. These costs were derived for the original Plan of Operations by a 3rd Party, the Winters Group in 1997. LVMC is pleased with DOGM's current guidance since LVMC has challenged these unit costs since 2008 without success in the bonding process. LVMC stated its assumption that elevated costs comprised a necessary cushion for a

regulatory bond estimate. DOGM reiterated its recommendations to re-evaluate the actual costs with a clarifying statement "the bond is the bond" with no reason for regulatory inflation.

2013 CAT™ Fleet Production and Cost Program

In response to agencies' direction, LVMC has completed an industry-standard engineering analysis and re-evaluation of the primary earth moving costs using CAT's Fleet Production and Costs (FPC) program.

FPC is a PC software tool designed to estimate the productivity, cost, and time required for a wide variety of earthmoving or other material handling operation's moving material from one location to another over one or more courses.

FPC takes in to account the following factors

- Haul road condition/gradients/rolling resistance/distances
- Speed limits and waiting times
- Machine availability/bucket fill factor/cycle times
- Material Densities
- Required Volumes
- Operator Efficiency

This program has allowed LVMC to evaluate each reclamation haul using a combination of truck/loader fleets currently owned and operated by LVMC. LVMC evaluated 8 individual hauls using 6 different fleet combinations. The details of this analysis are included and packaged along with a revised bond calculation. An electronic version has been made available for 3rd Party review.

In addition, LVMC has obtained current cost backup and written quotes for reclamation of miscellaneous areas. This includes the ponds area, fences, haul roads, wells abandonment, and post-mine groundwater monitoring. The backup information is included as a series of attachments. Also included as an attachment is the engineered 5-year forecast of total tons to the pad.

In summary, the reclamation bond package includes the following:

1. Site map of primary reclamation areas.
2. Surveyed reclamation stockpiles.
3. Required reclamation volumes and FPC input.
4. CAT ^{Tm} FPC analysis of primary reclamation hauls (including fpc4 electronic file)
5. 5-yr forecast of total tons to the leach pad.
6. Current aerial seeding cost.
7. Wells abandonment estimate and backup.
8. Plant demolition estimate and backup.
9. Groundwater monitoring cost and backup.
10. Revised bond spreadsheet.

LVMC appreciates the agencies ongoing support and looks forward to finalizing the mine bond as soon as possible.

Comment [LI2]:

Sincerely,

Lantz Indergard, P.G.
Environmental and Exploration Manager
Lisbon Valley Mining Co LLC
435 686 9950 #107
Lindergard@lisbonmine.com

LISBON VALLEY MINING CO

2013 Bond Worksheet
Lisbon Valley Mining Co
La Sal, Utah

ACTIVITY	AREA	QUANTITY	UNITS	$/Unit 2013	2013 Cost	2018 Cost
Waste Dump A- 120 acres						
Design area of top	287,560		SY			
Design area of slope	291,488		SY			
Grub footprint and harvest soil		193,500	CY			
Haul to Layback		193,500	CY			
Slope & roughen		579,048	SY	0.20	$ 115,810	
12 inches soil on top of dump		192,823	CY	0.76	$ 146,545	
12 inches soil on slope		192,823	CY	0.76	$ 146,545	
seed entire surface		120	acre	306	$ 36,720	
Total-waste dump "A" reclamation					$ 445,621	
Waste Dump B- 132 acres						
North Area B2	98,350		SY			
South area B1	540,000		SY			
Slope & roughen		638,350	SY	0.20	$ 127,670	
12 inches soil on top of dump		32,751	CY	0.76	$ 24,890	
12 inches soil on slope		179,820	CY	0.76	$ 136,663	
seed entire surface		132	acre	306	$ 40,392	
Total-waste dump "B" reclamation					$ 329,616	
Waste Dump C- 92 acres						
West Area C1	312,520		SY			
East area C2	132,000		SY			
ET CAP Area over former Sentinel East Pit	72,900		SY			
Slope & roughen north portions of C1		21,000	SY	0.20	$ 4,200	
ET CAP over former Sentinel East Pit		24,276	CY	0.74	$ 17,964	
12 inches soil on C1		104,069	CY	0.74	$ 77,011	
12 inches soil on C2		43,956	CY	0.77	$ 33,846	
seed entire surface		92	acre	306	$ 28,152	
Total-waste dump "C" reclamation					$ 161,173	
Rinse Heap- 12%of total ore neutralized; rinsing & evaporation for 18 months						
lime (2.5 lbs/ton)x($0.025/lb)x(4.5M ton)		4,500,000	ton	0.063	$ 283,500	
labor, power & pump for draindown &						
evaporation for 18 months		1	lot	446,640	$ 446,640	
Subtotal for heap rinse & evaporation					$ 730,140	
Heap Leach Pad - 185 Acres	913,375		SY			
area of the top	885,880		SY			
area of the slope	17,495		SY			
12 inches clay cap on top		295,840	CY	0.75	$ 221,730	
12 inches clay cap on slope		5,773	CY	0.75	$ 4,330	
24 inch crushed rock on top		600,240	CY	0.75	$ 450,180	
24 inch crushed rock on slope		11,722	CY	0.75	$ 8,791	
12 inches soil on top		295,840	CY	0.75	$ 221,730	
12 inches soil on top		5,773	CY	0.75	$ 4,330	
seed entire surface		185	acre	306	$ 56,610	
Subtotal- clay, crushed rock, soil & seeding for leach pad					$ 967,702	
Reclamation of Miscellaneous Areas						
Pond Area- 15.4 Acres	74,540		SY			
raffinate pond- crushed rock backfill		28,882	CY	0.75	$ 21,662	
12 inches soil on top		4,840	CY	0.75	$ 3,630	
PLS pond- crushed rock backfill		37,000	CY	0.75	$ 27,750	
12 inches soil on top		4,840	CY	0.75	$ 3,630	
ILS pond- crushed rock backfill		28,882	CY	0.75	$ 21,662	
12 inches soil on top		6,770	CY	0.75	$ 5,078	
E Stormwater pond- crushed rock backfill		55,500	CY	0.75	$ 41,625	
12 inches soil on top		8,380	CY	0.75	$ 6,285	
seed 4 pond areas		15.40	acre	306	$ 4,712	
Total-Pond Area reclamation					$ 136,033	
Plant & Crusher Area- 25.5 Acres	123,420		SY			
apply 12 inches soil		40,729	CY	0.75	$ 30,546	
seed entire plant area		25.5	acre	306	$ 7,803	
Total- Plant Area Reclamation					$ 38,349	
Haul Roads- 47 Acres						
scarify		227,500	SY	0.20	$ 45,500	
contour		75,075	CY	0.75	$ 56,306	
apply 12 inches soil		75,075	CY	0.75	$ 56,306	
seed entire area		40	acre	306	$ 12,240	
Total- Plant Reclamation Area					$ 170,353	
Power Line Corridor- 64 Acres						
*note the power company has requested the line remain						
open		64	acre	n/c	$ -	
Reseed Soil Stockpile Areas- 40 Acres						
reseed 40 acres		40	acre	306	$ 12,240	
Total- Reseed Soil Stock Pile Areas					$ 12,240	
Fences & Berms Around Open Pits						
fence around Sentinel Pit 1		5,620	LF	6.00	$ 33,720	
fence around Sentinel Pit 2		2,140	LF	6.00	$ 12,840	
fence around Centennial Pit		8,980	LF	6.00	$ 53,880	
fence around GTO Pit		7,410	LF	6.00	$ 44,460	
Total - Pit Fences					$ 144,900	
Surface Drainage Diversion Ditches						
leach pad area		7,473	CY	0.75	$ 5,605	
plant area		1,595	CY	0.75	$ 1,196	
crusher area		1,810	CY	0.75	$ 1,358	
dump areas		13,668	CY	0.75	$ 10,251	
Total-Drainage Diversion Ditches					$ 18,410	
Water Line						
12 inches soil on top		7,582	CY	0.75	$ 5,687	
seed entire surface		4.7	acre	240	$ 1,128	
Total-Drainage Diversion Ditches					$ 6,815	
Drill Pads and Boreholes						
Centennial Recess Drilling		23	pads	350	$ 8,050	
Other Miscellaneous Areas						
Direct Costs						
Mobilization and Demobilization		1	lot	35,000	$ 35,000	
Leach Pad & Waste Dumps		combined total of previous items			2,634,251	
Misc. Surface Areas		combined total of previous items			535,149	
Plugging monitoring wells						
35 Wells		35	wells	3500.00	$ 122,500	
Plant Dismantling		1	lot	310,000	$ 310,000	
assumes no salvage value						
Total Direct Costs					$ 3,636,900	$ 3,917,974
Indirect Costs						
Engineering- 5% of total direct costs		1	lot	181,845	$ 181,845	$ 195,899
Water Quality Monitoring and Reporting 11 Wells 5 years Consultant		5	year	30,000	$ 150,000	$ 161,593
Water Quality Monitoring 11 Wells 5 Years Lab (500/sample)		5	year	22,000	$ 110,000	$ 118,501
Revegetation monitoring for 5 years		5	year	5,000	$ 25,000	$ 26,932
Construction management		1	lot	180,199	$ 180,199	$ 194,126
Contingency (10% of Total Direct Costs)		1	lot	363,690	$ 363,690	$ 391,797
					$ -	$ -
Total Indirect Costs				$ 1,010,734	$ 1,010,734	$ 1,088,848
Total Costs					$ 4,647,634	$ 5,006,822

Total Bond 2013	4,647,634
Total Bond 2018	5,006,822
Existing Bond	6,076,688
Adjustment for 2013	**1,429,254**
Adjustment for 2018	**1,070,088**

Lisbon Vall M/037/0088
Surety Esc ########

	Percentage increase/y	Surety amount in <year> dollars		
2001	4.21%	1.0421		
2002	2.02%	1.0202	$0.00	
2003	1.71%	1.0171	$0.00	
2004	0.84%	1.0084	$0.00	
2005	3.99%	1.0399	$0.00	
2006	5.44%	1.0544	$0.00	
2007	2.12%	1.0212	$0.00	
2008	-3.40%	0.966	$0.00	
2009	2.90%	1.029	$0.00	
2010	1.80%	1.018	$0.00	
2011	2.90%	1.029	$0.00	
2012	3.40%	1.034	$0.00	
2013	1.50%	1.015	$4,647,633.86	Average of previous five years
2018			$5,006,821.62	
Rounded to nearest $100			$4,647,600.00	

Note: The surety amount is listed in the row of the year in which it was calculated.
The escalation factor for a year is applied to the surety amount to take it to the next year.

Lisbon Vall M/037/0088

Surety Esc June 17, 2013

	Percentage increase/year		Surety amount in <year> dollars	
2001	4.21%	1.0421		
2002	2.02%	1.0202	$0.00	
2003	1.71%	1.0171	$0.00	
2004	0.84%	1.0084	$0.00	
2005	3.99%	1.0399	$0.00	
2006	5.44%	1.0544	$0.00	
2007	2.12%	1.0212	$5,006,821.62	
2008	-3.40%	0.966	$5,112,966.24	
2009	2.90%	1.029	$4,939,125.38	
2010	1.80%	1.018	$5,082,360.02	
2011	2.90%	1.029	$5,173,842.50	
2012	3.40%	1.034	$5,323,883.93	
2013	1.50%	1.015	$5,504,895.99	Average of previous fiv
2018			$5,930,336.39	
Rounded to nearest $100			$5,504,900.00	

Note: The surety amount is listed in the row of the year in which it was calculated.
The escalation factor for a year is applied to the surety amount to take it to the next year.

Fleet Production - Leach Pad TP 1&2 to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	90.33	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	486.75	Tons
Total Production	402,700	Tons
Sched Hrs Required	827.33	
Total Cost ($)	328,620	
Cost per Ton ($)	0.816	
Production per Year	973,497	Tons
Years Required	0.41	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	964	6.6	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.46	48.35	792.42
Fleet Tons per Operating Hour					792.42
x 90.33% Operator Efficiency =					715.81
x 68.00% Fleet Availability =					486.75

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	703	84,387	0.21
Haulers:	3	773F	1224	123	1,986	244,233	0.606
Totals	3				1,986	244,233	0.606
Fleet Totals	4				2,689	328,620	0.816

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,255.71	Tons
Total Production	44,100	Tons
Sched Hrs Required	35.12	
Total Cost ($)	26,347	
Cost per Ton ($)	0.597	
Production per Year	2,511,415	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,226		5.8

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.37	96.71	1,690.91
Fleet Tons per Operating Hour					1,690.91
x 91.25% Operator Efficiency =					1,542.99
x 81.38% Fleet Availability =					1,255.71

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	30	5,970	0.135
Haulers:	4	777G		170.65	119	20,377	0.462
Totals	4				119	20,377	0.462
Fleet Totals	5				149	26,347	0.597

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,257.62	Tons
Total Production	241,900	Tons
Sched Hrs Required	192.35	
Total Cost ($)	144,301	
Cost per Ton ($)	0.597	
Production per Year	2,515,236	Tons
Years Required	0.1	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,687		6.9

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.59	96.71	1,776.32
Fleet Tons per Operating Hour					1,776.32
x 87.00% Operator Efficiency =					1,545.34
x 81.38% Fleet Availability =					1,257.62

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	163	32,699	0.135
Haulers:	4	777G		170.65	654	111,602	0.461
Totals	4				654	111,602	0.461
Fleet Totals	5				817	144,301	0.597

Fleet Production - K-dump clay to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	402,700	Tons
Sched Hrs Required	314.97	
Total Cost ($)	236,295	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.16	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,344		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	268	53,545	0.133
Haulers:	4	777G		170.65	1,071	182,750	0.454
Totals	4				1,071	182,750	0.454
Fleet Totals	5				1,339	236,295	0.587

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	805,400	Tons
Sched Hrs Required	629.94	
Total Cost ($)	472,591	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.31	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,349		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	535	107,091	0.133
Haulers:	4	777G		170.65	2,142	365,500	0.454
Totals	4				2,142	365,500	0.454
Fleet Totals	5				2,677	472,591	0.587

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,250.36	Tons
Total Production	59,100	Tons
Sched Hrs Required	47.27	
Total Cost ($)	35,460	
Cost per Ton ($)	0.6	
Production per Year	2,500,713	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,122	5.5	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.3	96.71	1,662.81
Fleet Tons per Operating Hour					1,662.81
x 92.40% Operator Efficiency =					1,536.42
x 81.38% Fleet Availability =					1,250.36

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	40	8,035	0.136
Haulers:	4	777G		170.65	161	27,425	0.464
Totals	4				161	27,425	0.464
Fleet Totals	5				201	35,460	0.6

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,255.71	Tons
Total Production	44,100	Tons
Sched Hrs Required	35.12	
Total Cost ($)	26,347	
Cost per Ton ($)	0.597	
Production per Year	2,511,415	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,226	5.8	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.37	96.71	1,690.91
Fleet Tons per Operating Hour					1,690.91
x 91.25% Operator Efficiency =					1,542.99
x 81.38% Fleet Availability =					1,255.71

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	30	5,970	0.135
Haulers:	4	777G		170.65	119	20,377	0.462
Totals	4				119	20,377	0.462
Fleet Totals	5				149	26,347	0.597

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,257.62	Tons
Total Production	241,900	Tons
Sched Hrs Required	192.35	
Total Cost ($)	144,301	
Cost per Ton ($)	0.597	
Production per Year	2,515,236	Tons
Years Required	0.1	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,687		6.9

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons		Tons per Hour
1	4	777G	4.59		96.71	1,776.32
Fleet Tons per Operating Hour						1,776.32
x 87.00% Operator Efficiency =						1,545.34
x 81.38% Fleet Availability =						1,257.62

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	163	32,699	0.135
Haulers:	4	777G		170.65	654	111,602	0.461
Totals	4				654	111,602	0.461
Fleet Totals	5				817	144,301	0.597

Fleet Production - K-dump clay to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	402,700	Tons
Sched Hrs Required	314.97	
Total Cost ($)	236,295	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.16	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,344		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	268	53,545	0.133
Haulers:	4	777G		170.65	1,071	182,750	0.454
Totals	4				1,071	182,750	0.454
Fleet Totals	5				1,339	236,295	0.587

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	805,400	Tons
Sched Hrs Required	629.94	
Total Cost ($)	472,591	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.31	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,349		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	535	107,091	0.133
Haulers:	4	777G		170.65	2,142	365,500	0.454
Totals	4				2,142	365,500	0.454
Fleet Totals	5				2,677	472,591	0.587

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,250.36	Tons
Total Production	59,100	Tons
Sched Hrs Required	47.27	
Total Cost ($)	35,460	
Cost per Ton ($)	0.6	
Production per Year	2,500,713	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,122	5.5	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.3	96.71	1,662.81
Fleet Tons per Operating Hour					1,662.81
x 92.40% Operator Efficiency =					1,536.42
x 81.38% Fleet Availability =					1,250.36

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	40	8,035	0.136
Haulers:	4	777G		170.65	161	27,425	0.464
Totals	4				161	27,425	0.464
Fleet Totals	5				201	35,460	0.6

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,255.71	Tons
Total Production	44,100	Tons
Sched Hrs Required	35.12	
Total Cost ($)	26,347	
Cost per Ton ($)	0.597	
Production per Year	2,511,415	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,226		5.8

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.37	96.71	1,690.91
Fleet Tons per Operating Hour					1,690.91
x 91.25% Operator Efficiency =					1,542.99
x 81.38% Fleet Availability =					1,255.71

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	30	5,970	0.135
Haulers:	4	777G		170.65	119	20,377	0.462
Totals	4				119	20,377	0.462
Fleet Totals	5				149	26,347	0.597

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,257.62	Tons
Total Production	241,900	Tons
Sched Hrs Required	192.35	
Total Cost ($)	144,301	
Cost per Ton ($)	0.597	
Production per Year	2,515,236	Tons
Years Required	0.1	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,687		6.9

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.59	96.71	1,776.32
Fleet Tons per Operating Hour					1,776.32
x 87.00% Operator Efficiency =					1,545.34
x 81.38% Fleet Availability =					1,257.62

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	163	32,699	0.135
Haulers:	4	777G		170.65	654	111,602	0.461
Totals	4				654	111,602	0.461
Fleet Totals	5				817	144,301	0.597

Fleet Production - K-dump clay to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	402,700	Tons
Sched Hrs Required	314.97	
Total Cost ($)	236,295	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.16	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,344		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	268	53,545	0.133
Haulers:	4	777G		170.65	1,071	182,750	0.454
Totals	4				1,071	182,750	0.454
Fleet Totals	5				1,339	236,295	0.587

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	805,400	Tons
Sched Hrs Required	629.94	
Total Cost ($)	472,591	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.31	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,349		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	535	107,091	0.133
Haulers:	4	777G		170.65	2,142	365,500	0.454
Totals	4				2,142	365,500	0.454
Fleet Totals	5				2,677	472,591	0.587

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,250.36	Tons
Total Production	59,100	Tons
Sched Hrs Required	47.27	
Total Cost ($)	35,460	
Cost per Ton ($)	0.6	
Production per Year	2,500,713	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,122		5.5

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.3	96.71	1,662.81
Fleet Tons per Operating Hour					1,662.81
x 92.40% Operator Efficiency =					1,536.42
x 81.38% Fleet Availability =					1,250.36

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	40	8,035	0.136
Haulers:	4	777G		170.65	161	27,425	0.464
Totals	4				161	27,425	0.464
Fleet Totals	5				201	35,460	0.6

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,255.71	Tons
Total Production	44,100	Tons
Sched Hrs Required	35.12	
Total Cost ($)	26,347	
Cost per Ton ($)	0.597	
Production per Year	2,511,415	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,226		5.8

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
	1 4	777G	4.37	96.71	1,690.91
Fleet Tons per Operating Hour					1,690.91
x 91.25% Operator Efficiency =					1,542.99
x 81.38% Fleet Availability =					1,255.71

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	30	5,970	0.135
Haulers:	4	777G		170.65	119	20,377	0.462
Totals	4				119	20,377	0.462
Fleet Totals	5				149	26,347	0.597

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,257.62	Tons
Total Production	241,900	Tons
Sched Hrs Required	192.35	
Total Cost ($)	144,301	
Cost per Ton ($)	0.597	
Production per Year	2,515,236	Tons
Years Required	0.1	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,687		6.9

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.59	96.71	1,776.32
Fleet Tons per Operating Hour					1,776.32
x 87.00% Operator Efficiency =					1,545.34
x 81.38% Fleet Availability =					1,257.62

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	163	32,699	0.135
Haulers:	4	777G		170.65	654	111,602	0.461
Totals	4				654	111,602	0.461
Fleet Totals	5				817	144,301	0.597

Fleet Production - K-dump clay to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	402,700	Tons
Sched Hrs Required	314.97	
Total Cost ($)	236,295	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.16	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,344	6.1	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	268	53,545	0.133
Haulers:	4	777G		170.65	1,071	182,750	0.454
Totals	4				1,071	182,750	0.454
Fleet Totals	5				1,339	236,295	0.587

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,278.53	Tons
Total Production	805,400	Tons
Sched Hrs Required	629.94	
Total Cost ($)	472,591	
Cost per Ton ($)	0.587	
Production per Year	2,557,051	Tons
Years Required	0.31	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,349		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.45	96.71	1,722.65
Fleet Tons per Operating Hour					1,722.65
x 91.20% Operator Efficiency =					1,571.03
x 81.38% Fleet Availability =					1,278.53

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	535	107,091	0.133
Haulers:	4	777G		170.65	2,142	365,500	0.454
Totals	4				2,142	365,500	0.454
Fleet Totals	5				2,677	472,591	0.587

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,250.36	Tons
Total Production	59,100	Tons
Sched Hrs Required	47.27	
Total Cost ($)	35,460	
Cost per Ton ($)	0.6	
Production per Year	2,500,713	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,122		5.5

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.3	96.71	1,662.81
Fleet Tons per Operating Hour					1,662.81
x 92.40% Operator Efficiency =					1,536.42
x 81.38% Fleet Availability =					1,250.36

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	40	8,035	0.136
Haulers:	4	777G		170.65	161	27,425	0.464
Totals	4				161	27,425	0.464
Fleet Totals	5				201	35,460	0.6

Fleet Production - Layback TP1 to C1

Fleet Estimates

Operating Schedule		
Operator Efficiency	89.66	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	81.38	%
Production per Sched Hr	1,289.82	Tons
Total Production	140,000	Tons
Sched Hrs Required	108.54	
Total Cost ($)	81,430	
Cost per Ton ($)	0.582	
Production per Year	2,579,632	Tons
Years Required	0.05	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	4	777G	2,626	6.8	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	777G	4.57	96.71	1,767.62
Fleet Tons per Operating Hour					1,767.62
x 89.66% Operator Efficiency =					1,584.90
x 81.38% Fleet Availability =					1,289.82

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	92	18,452	0.132
Haulers:	4	777G		170.65	369	62,978	0.45
Totals	4				369	62,978	0.45
Fleet Totals	5				461	81,430	0.582

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	960.12	Tons
Total Production	44,100	Tons
Sched Hrs Required	45.93	
Total Cost ($)	27,796	
Cost per Ton ($)	0.63	
Production per Year	1,920,232	Tons
Years Required	0.02	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour
1	1	992K	1,813	
2	3	777G	1,669	5.8

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	777G	5.02	96.71	1,456.28
Fleet Tons per Operating Hour					1,456.28
x 91.25% Operator Efficiency =					1,328.88
x 72.25% Fleet Availability =					960.12

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	39	7,808	0.177
Haulers:	3	777G		170.65	117	19,988	0.453
Totals	3				117	19,988	0.453
Fleet Totals	4				156	27,796	0.63

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	1,018.94	Tons
Total Production	241,900	Tons
Sched Hrs Required	237.4	
Total Cost ($)	143,666	
Cost per Ton ($)	0.594	
Production per Year	2,037,890	Tons
Years Required	0.12	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	3	777G	2,015		6.9

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons		Tons per Hour
1	3	777G	5.59		96.71	1,621.10
Fleet Tons per Operating Hour						1,621.10
x 87.00% Operator Efficiency =						1,410.30
x 72.25% Fleet Availability =						1,018.94

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	202	40,358	0.167
Haulers:	3	777G		170.65	605	103,307	0.427
Totals	3				605	103,307	0.427
Fleet Totals	4				807	143,666	0.594

Fleet Production - K-dump clay to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	997.48	Tons
Total Production	402,700	Tons
Sched Hrs Required	403.72	
Total Cost ($)	244,312	
Cost per Ton ($)	0.607	
Production per Year	1,994,968	Tons
Years Required	0.2	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	3	777G	1,758		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	777G	5.22	96.71	1,513.84
Fleet Tons per Operating Hour					1,513.84
x 91.20% Operator Efficiency =					1,380.60
x 72.25% Fleet Availability =					997.48

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	343	68,632	0.17
Haulers:	3	777G		170.65	1,029	175,680	0.436
Totals	3				1,029	175,680	0.436
Fleet Totals	4				1,373	244,312	0.607

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	996.45	Tons
Total Production	805,400	Tons
Sched Hrs Required	808.27	
Total Cost ($)	489,130	
Cost per Ton ($)	0.607	
Production per Year	1,992,901	Tons
Years Required	0.4	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	3	777G	1,762		6.1

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	777G	5.21	96.71	1,512.27
Fleet Tons per Operating Hour					1,512.27
x 91.20% Operator Efficiency =					1,379.17
x 72.25% Fleet Availability =					996.45

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	687	137,406	0.171
Haulers:	3	777G		170.65	2,061	351,724	0.437
Totals	3				2,061	351,724	0.437
Fleet Totals	4				2,748	489,130	0.607

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	939.9	Tons
Total Production	59,100	Tons
Sched Hrs Required	62.88	
Total Cost ($)	38,052	
Cost per Ton ($)	0.644	
Production per Year	1,879,805	Tons
Years Required	0.03	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	3	777G	1,592		5.5

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	777G	4.85	96.71	1,407.92
Fleet Tons per Operating Hour					1,407.92
x 92.40% Operator Efficiency =					1,300.90
x 72.25% Fleet Availability =					939.9

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	53	10,689	0.181
Haulers:	3	777G		170.65	160	27,362	0.463
Totals	3				160	27,362	0.463
Fleet Totals	4				214	38,052	0.644

Fleet Production - Layback TP1 to C1

Fleet Estimates

Operating Schedule		
Operator Efficiency	89.66	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	1,036.08	Tons
Total Production	140,000	Tons
Sched Hrs Required	135.12	
Total Cost ($)	81,772	
Cost per Ton ($)	0.584	
Production per Year	2,072,163	Tons
Years Required	0.07	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	3	777G	1,970	6.8	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	777G	5.51	96.71	1,599.34
Fleet Tons per Operating Hour					1,599.34
x 89.66% Operator Efficiency =					1,434.02
x 72.25% Fleet Availability =					1,036.08

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	115	22,971	0.164
Haulers:	3	777G		170.65	345	58,800	0.42
Totals	3				345	58,800	0.42
Fleet Totals	4				459	81,772	0.584

Fleet Production - Layback TP2 to A-dump

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.89	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	950.12	Tons
Total Production	247,100	Tons
Sched Hrs Required	260.07	
Total Cost ($)	157,384	
Cost per Ton ($)	0.637	
Production per Year	1,900,246	Tons
Years Required	0.13	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	3	777G	1,604		5.5

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	777G	4.88	96.71	1,415.64
Fleet Tons per Operating Hour					1,415.64
x 92.89% Operator Efficiency =					1,315.05
x 72.25% Fleet Availability =					950.12

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	221	44,212	0.179
Haulers:	3	777G		170.65	663	113,172	0.458
Totals	3				663	113,172	0.458
Fleet Totals	4				884	157,384	0.637

Fleet Production - Leach Pad TP 1&2 to heap center

Fleet Estimates

Operating Schedule		
Operator Efficiency	90.33	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	1,015.41	Tons
Total Production	402,700	Tons
Sched Hrs Required	396.59	
Total Cost ($)	240,000	
Cost per Ton ($)	0.596	
Production per Year	2,030,811	Tons
Years Required	0.2	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	3	777G	1,852		6.4

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons		Tons per Hour
1	3	777G	5.36	96.71		1,555.82
Fleet Tons per Operating Hour						1,555.82
x 90.33% Operator Efficiency =						1,405.41
x 72.25% Fleet Availability =						1,015.41

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	337	67,420	0.167
Haulers:	3	777G		170.65	1,011	172,579	0.429
Totals	3				1,011	172,579	0.429
Fleet Totals	4				1,348	240,000	0.596

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	694.15	Tons
Total Production	44,100	Tons
Sched Hrs Required	63.53	
Total Cost ($)	29,231	
Cost per Ton ($)	0.663	
Production per Year	1,388,302	Tons
Years Required	0.03	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	2	777G	1,113	5.8	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	2	777G	5.44	96.71	1,052.87
Fleet Tons per Operating Hour					1,052.87
x 91.25% Operator Efficiency =					960.76
x 72.25% Fleet Availability =					694.15

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	54	10,800	0.245
Haulers:	2	777G		170.65	108	18,431	0.418
Totals	2				108	18,431	0.418
Fleet Totals	3				162	29,231	0.663

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	726.21	Tons
Total Production	805,400	Tons
Sched Hrs Required	1,109.04	
Total Cost ($)	510,277	
Cost per Ton ($)	0.634	
Production per Year	1,452,422	Tons
Years Required	0.55	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	2	777G	1,174	6.1	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	2	777G	5.7	96.71	1,102.14
Fleet Tons per Operating Hour					1,102.14
x 91.20% Operator Efficiency =					1,005.14
x 72.25% Fleet Availability =					726.21

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	943	188,538	0.234
Haulers:	2	777G		170.65	1,885	321,739	0.399
Totals	2				1,885	321,739	0.399
Fleet Totals	3				2,828	510,277	0.634

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	675.62	Tons
Total Production	59,100	Tons
Sched Hrs Required	87.48	
Total Cost ($)	40,248	
Cost per Ton ($)	0.681	
Production per Year	1,351,238	Tons
Years Required	0.04	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	2	777G	1,061	5.5	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	2	777G	5.23	96.71	1,012.04
Fleet Tons per Operating Hour					1,012.04
x 92.40% Operator Efficiency =					935.11
x 72.25% Fleet Availability =					675.62

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	74	14,871	0.252
Haulers:	2	777G		170.65	149	25,377	0.429
Totals	2				149	25,377	0.429
Fleet Totals	3				223	40,248	0.681

Fleet Production - Layback TP1 to C1

Fleet Estimates

Operating Schedule		
Operator Efficiency	89.66	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	781.22	Tons
Total Production	140,000	Tons
Sched Hrs Required	179.21	
Total Cost ($)	82,454	
Cost per Ton ($)	0.589	
Production per Year	1,562,448	Tons
Years Required	0.09	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	2	777G	1,313	6.8	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	2	777G	6.23	96.71	1,205.93
Fleet Tons per Operating Hour					1,205.93
x 89.66% Operator Efficiency =					1,081.28
x 72.25% Fleet Availability =					781.22

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	152	30,465	0.218
Haulers:	2	777G		170.65	305	51,989	0.371
Totals	2				305	51,989	0.371
Fleet Totals	3				457	82,454	0.589

Fleet Production - Layback TP2 to A-dump

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.89	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	684.67	Tons
Total Production	247,100	Tons
Sched Hrs Required	360.9	
Total Cost ($)	166,054	
Cost per Ton ($)	0.672	
Production per Year	1,369,337	Tons
Years Required	0.18	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	2	777G	1,070		5.5

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	2	777G	5.27	96.71	1,020.13
Fleet Tons per Operating Hour					1,020.13
x 92.89% Operator Efficiency =					947.64
x 72.25% Fleet Availability =					684.67

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	307	61,354	0.248
Haulers:	2	777G		170.65	614	104,700	0.424
Totals	2				614	104,700	0.424
Fleet Totals	3				920	166,054	0.672

Fleet Production - Leach Pad TP 1&2 to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	90.33	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	72.25	%
Production per Sched Hr	747.88	Tons
Total Production	402,700	Tons
Sched Hrs Required	538.46	
Total Cost ($)	247,747	
Cost per Ton ($)	0.615	
Production per Year	1,495,755	Tons
Years Required	0.27	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,813		
2	2	777G	1,235		6.4

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	2	777G	5.92	96.71	1,145.91
Fleet Tons per Operating Hour					1,145.91
x 90.33% Operator Efficiency =					1,035.12
x 72.25% Fleet Availability =					747.88

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	458	91,538	0.227
Haulers:	2	777G		170.65	915	156,209	0.388
Totals	2				915	156,209	0.388
Fleet Totals	3				1,373	247,747	0.615

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	641.05	Tons
Total Production	44,100	Tons
Sched Hrs Required	68.79	
Total Cost ($)	34,300	
Cost per Ton ($)	0.778	
Production per Year	1,282,110	Tons
Years Required	0.03	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,095		6.3

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.93	58.03	1,033.10
Fleet Tons per Operating Hour					1,033.10
x 91.25% Operator Efficiency =					942.73
x 68.00% Fleet Availability =					641.05

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	58	11,695	0.265
Haulers:	3	773F	1224	136.91	165	22,605	0.513
Totals	3				165	22,605	0.513
Fleet Totals	4				224	34,300	0.778

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	765.1	Tons
Total Production	241,900	Tons
Sched Hrs Required	316.17	
Total Cost ($)	154,653	
Cost per Ton ($)	0.639	
Production per Year	1,530,210	Tons
Years Required	0.16	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,444		8.3

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	7.43	58.03	1,293.33
Fleet Tons per Operating Hour					1,293.33
x 87.00% Operator Efficiency =					1,125.15
x 68.00% Fleet Availability =					765.1

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	269	53,748	0.222
Haulers:	3	773F	1224	132.98	759	100,905	0.417
Totals	3				759	100,905	0.417
Fleet Totals	4				1,028	154,653	0.639

Fleet Production - K-dump clay to pad

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	693.61	Tons
Total Production	402,700	Tons
Sched Hrs Required	580.59	
Total Cost ($)	287,107	
Cost per Ton ($)	0.713	
Production per Year	1,387,212	Tons
Years Required	0.29	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,208	6.9	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	6.42	58.03	1,118.45
Fleet Tons per Operating Hour					1,118.45
x 91.20% Operator Efficiency =					1,020.01
x 68.00% Fleet Availability =					693.61

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	494	98,700	0.245
Haulers:	3	773F	1224	135.21	1,393	188,407	0.468
Totals	3				1,393	188,407	0.468
Fleet Totals	4				1,887	287,107	0.713

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	700.32	Tons
Total Production	805,400	Tons
Sched Hrs Required	1,150.04	
Total Cost ($)	564,337	
Cost per Ton ($)	0.701	
Production per Year	1,400,649	Tons
Years Required	0.58	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,223		7

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	6.49	58.03	1,129.28
Fleet Tons per Operating Hour					1,129.28
x 91.20% Operator Efficiency =					1,029.89
x 68.00% Fleet Availability =					700.32

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	978	195,506	0.243
Haulers:	3	773F	1224	133.63	2,760	368,831	0.458
Totals	3				2,760	368,831	0.458
Fleet Totals	4				3,738	564,337	0.701

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	650.24	Tons
Total Production	59,100	Tons
Sched Hrs Required	90.89	
Total Cost ($)	44,998	
Cost per Ton ($)	0.761	
Production per Year	1,300,474	Tons
Years Required	0.05	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,100		6.3

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.94	58.03	1,034.89
Fleet Tons per Operating Hour					1,034.89
x 92.40% Operator Efficiency =					956.23
x 68.00% Fleet Availability =					650.24

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	77	15,451	0.261
Haulers:	3	773F	1224	135.45	218	29,546	0.5
Totals	3				218	29,546	0.5
Fleet Totals	4				295	44,998	0.761

Fleet Production - Layback TP1 to C1

Fleet Estimates

Operating Schedule		
Operator Efficiency	89.66	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	764.88	Tons
Total Production	140,000	Tons
Sched Hrs Required	183.04	
Total Cost ($)	88,132	
Cost per Ton ($)	0.63	
Production per Year	1,529,759	Tons
Years Required	0.09	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,394		8

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	7.21	58.03	1,254.50
Fleet Tons per Operating Hour					1,254.50
x 89.66% Operator Efficiency =					1,124.82
x 68.00% Fleet Availability =					764.88

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	156	31,116	0.222
Haulers:	3	773F	1224	129.79	439	57,016	0.407
Totals	3				439	57,016	0.407
Fleet Totals	4				595	88,132	0.63

Fleet Production - Layback TP2 to A-dump

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.89	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	652.93	Tons
Total Production	247,100	Tons
Sched Hrs Required	378.45	
Total Cost ($)	183,936	
Cost per Ton ($)	0.744	
Production per Year	1,305,862	Tons
Years Required	0.19	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,098		6.3

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
	1 3	773F	5.94	58.03	1,033.64
Fleet Tons per Operating Hour					1,033.64
x 92.89% Operator Efficiency =					960.19
x 68.00% Fleet Availability =					652.93

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	322	64,336	0.26
Haulers:	3	773F	1224	131.68	908	119,599	0.484
Totals	3				908	119,599	0.484
Fleet Totals	4				1,230	183,936	0.744

Fleet Production - Leach Pad TP 1&2 to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	90.33	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	731.35	Tons
Total Production	402,700	Tons
Sched Hrs Required	550.63	
Total Cost ($)	271,641	
Cost per Ton ($)	0.675	
Production per Year	1,462,691	Tons
Years Required	0.28	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	992K	1,741		
2	3	773F	1,303		7.5

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	6.84	58.03	1,190.62
Fleet Tons per Operating Hour					1,190.62
x 90.33% Operator Efficiency =					1,075.51
x 68.00% Fleet Availability =					731.35

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	992K		200	468	93,607	0.232
Haulers:	3	773F	1224	134.72	1,322	178,034	0.442
Totals	3				1,322	178,034	0.442
Fleet Totals	4				1,790	271,641	0.675

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	63.75	%
Production per Sched Hr	453.88	Tons
Total Production	44,100	Tons
Sched Hrs Required	97.16	
Total Cost ($)	39,385	
Cost per Ton ($)	0.893	
Production per Year	907,765	Tons
Years Required	0.05	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	951	6.1	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	5.04	38.68	780.23
Fleet Tons per Operating Hour					780.23
x 91.25% Operator Efficiency =					711.97
x 63.75% Fleet Availability =					453.88

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	83	9,910	0.225
Haulers:	4	740 Tier 3	C271	101.12	291	29,475	0.668
Totals	4				291	29,475	0.668
Fleet Totals	5				374	39,385	0.893

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	75.38	%
Production per Sched Hr	560.66	Tons
Total Production	241,900	Tons
Sched Hrs Required	431.46	
Total Cost ($)	174,896	
Cost per Ton ($)	0.723	
Production per Year	1,121,316	Tons
Years Required	0.22	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	1,191		7.7

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	5.53	38.68	854.95
Fleet Tons per Operating Hour					854.95
x 87.00% Operator Efficiency =					743.77
x 75.38% Fleet Availability =					560.66

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	367	44,009	0.182
Haulers:	4	740 Tier 3	C271	101.12	1,294	130,887	0.541
Totals	4				1,294	130,887	0.541
Fleet Totals	5				1,661	174,896	0.723

Fleet Production - K-dump clay to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	63.75	%
Production per Sched Hr	466.07	Tons
Total Production	402,700	Tons
Sched Hrs Required	864.03	
Total Cost ($)	350,242	
Cost per Ton ($)	0.87	
Production per Year	932,147	Tons
Years Required	0.43	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	1,003		6.5

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	5.18	38.68	801.65
Fleet Tons per Operating Hour					801.65
x 91.20% Operator Efficiency =					731.1
x 63.75% Fleet Availability =					466.07

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	734	88,131	0.219
Haulers:	4	740 Tier 3	C271	101.12	2,592	262,111	0.651
Totals	4				2,592	262,111	0.651
Fleet Totals	5				3,327	350,242	0.87

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	63.75	%
Production per Sched Hr	468.15	Tons
Total Production	805,400	Tons
Sched Hrs Required	1,720.39	
Total Cost ($)	697,378	
Cost per Ton ($)	0.866	
Production per Year	936,299	Tons
Years Required	0.86	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	1,017	6.6	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	5.2	38.68	805.22
Fleet Tons per Operating Hour					805.22
x 91.20% Operator Efficiency =					734.35
x 63.75% Fleet Availability =					468.15

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	1,462	175,480	0.218
Haulers:	4	740 Tier 3	C271	101.12	5,161	521,898	0.648
Totals	4				5,161	521,898	0.648
Fleet Totals	5				6,624	697,378	0.866

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	63.75	%
Production per Sched Hr	453.28	Tons
Total Production	59,100	Tons
Sched Hrs Required	130.38	
Total Cost ($)	52,852	
Cost per Ton ($)	0.894	
Production per Year	906,555	Tons
Years Required	0.07	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	924		6

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	4.97	38.68	769.51
Fleet Tons per Operating Hour					769.51
x 92.40% Operator Efficiency =					711.02
x 63.75% Fleet Availability =					453.28

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	111	13,299	0.225
Haulers:	4	740 Tier 3	C271	101.12	391	39,553	0.669
Totals	4				391	39,553	0.669
Fleet Totals	5				502	52,852	0.894

Fleet Production - Layback TP1 to C1

Fleet Estimates

Operating Schedule		
Operator Efficiency	89.66	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	75.38	%
Production per Sched Hr	571.69	Tons
Total Production	140,000	Tons
Sched Hrs Required	244.89	
Total Cost ($)	99,268	
Cost per Ton ($)	0.709	
Production per Year	1,143,378	Tons
Years Required	0.12	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	1,150		7.4

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	5.47	38.68	845.84
Fleet Tons per Operating Hour					845.84
x 89.66% Operator Efficiency =					758.41
x 75.38% Fleet Availability =					571.69

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	208	24,979	0.178
Haulers:	4	740 Tier 3	C271	101.12	735	74,289	0.531
Totals	4				735	74,289	0.531
Fleet Totals	5				943	99,268	0.709

Fleet Production - Layback TP2 to A-dump

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.89	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	63.75	%
Production per Sched Hr	453.59	Tons
Total Production	247,100	Tons
Sched Hrs Required	544.76	
Total Cost ($)	220,826	
Cost per Ton ($)	0.894	
Production per Year	907,182	Tons
Years Required	0.27	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	919	5.9	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	4.95	38.68	765.94
Fleet Tons per Operating Hour					765.94
x 92.89% Operator Efficiency =					711.52
x 63.75% Fleet Availability =					453.59

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	463	55,566	0.225
Haulers:	4	740 Tier 3	C271	101.12	1,634	165,260	0.669
Totals	4				1,634	165,260	0.669
Fleet Totals	5				2,097	220,826	0.894

Fleet Production - Leach Pad TP 1&2 to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	90.33	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	75.38	%
Production per Sched Hr	565.31	Tons
Total Production	402,700	Tons
Sched Hrs Required	712.35	
Total Cost ($)	288,757	
Cost per Ton ($)	0.717	
Production per Year	1,130,630	Tons
Years Required	0.36	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	893		
2	4	740 Tier 3	1,080		7

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	4	740 Tier 3	5.37	38.68	830.22
Fleet Tons per Operating Hour					830.22
x 90.33% Operator Efficiency =					749.95
x 75.38% Fleet Availability =					565.31

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	605	72,659	0.18
Haulers:	4	740 Tier 3	C271	101.12	2,137	216,097	0.537
Totals	4				2,137	216,097	0.537
Fleet Totals	5				2,743	288,757	0.717

Fleet Production - B-dump TP 1&2 to B-dump lower

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.25	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	462.76	Tons
Total Production	44,100	Tons
Sched Hrs Required	95.3	
Total Cost ($)	38,963	
Cost per Ton ($)	0.884	
Production per Year	925,522	Tons
Years Required	0.05	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	863	6	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.14	48.35	745.77
Fleet Tons per Operating Hour					745.77
x 91.25% Operator Efficiency =					680.53
x 68.00% Fleet Availability =					462.76

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	81	9,720	0.22
Haulers:	3	773F	1224	127.85	229	29,242	0.663
Totals	3				229	29,242	0.663
Fleet Totals	4				310	38,963	0.884

Fleet Production - B-dump TP 1&2 to B-dump upper

Fleet Estimates

Operating Schedule		
Operator Efficiency	87	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	491.84	Tons
Total Production	241,900	Tons
Sched Hrs Required	491.83	
Total Cost ($)	192,236	
Cost per Ton ($)	0.795	
Production per Year	983,679	Tons
Years Required	0.25	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	1,062	7.3	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.73	48.35	831.4
Fleet Tons per Operating Hour					831.4
x 87.00% Operator Efficiency =					723.29
x 68.00% Fleet Availability =					491.84

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	418	50,166	0.207
Haulers:	3	773F	1224	120.36	1,180	142,070	0.587
Totals	3				1,180	142,070	0.587
Fleet Totals	4				1,598	192,236	0.795

Fleet Production - K-dump clay to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	476.52	Tons
Total Production	402,700	Tons
Sched Hrs Required	845.09	
Total Cost ($)	338,642	
Cost per Ton ($)	0.841	
Production per Year	953,034	Tons
Years Required	0.42	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	901	6.2	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.3	48.35	768.39
Fleet Tons per Operating Hour					768.39
x 91.20% Operator Efficiency =					700.76
x 68.00% Fleet Availability =					476.52

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	718	86,199	0.214
Haulers:	3	773F	1224	124.47	2,028	252,443	0.627
Totals	3				2,028	252,443	0.627
Fleet Totals	4				2,747	338,642	0.841

Fleet Production - K-dump rock to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	91.2	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	477.92	Tons
Total Production	805,400	Tons
Sched Hrs Required	1,685.20	
Total Cost ($)	669,892	
Cost per Ton ($)	0.832	
Production per Year	955,848	Tons
Years Required	0.84	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	910	6.3	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.31	48.35	770.66
Fleet Tons per Operating Hour					770.66
x 91.20% Operator Efficiency =					702.83
x 68.00% Fleet Availability =					477.92

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	1,432	171,891	0.213
Haulers:	3	773F	1224	123.13	4,044	498,001	0.618
Totals	3				4,044	498,001	0.618
Fleet Totals	4				5,477	669,892	0.832

Fleet Production - Layback TP1 to C2

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.4	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	456.92	Tons
Total Production	59,100	Tons
Sched Hrs Required	129.35	
Total Cost ($)	52,154	
Cost per Ton ($)	0.882	
Production per Year	913,832	Tons
Years Required	0.06	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	831	5.7	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.01	48.35	727.21
Fleet Tons per Operating Hour					727.21
x 92.40% Operator Efficiency =					671.94
x 68.00% Fleet Availability =					456.92

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	110	13,193	0.223
Haulers:	3	773F	1224	125.51	310	38,961	0.659
Totals	3				310	38,961	0.659
Fleet Totals	4				420	52,154	0.882

Fleet Production - Layback TP1 to C1

Fleet Estimates

Operating Schedule		
Operator Efficiency	89.66	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	496.41	Tons
Total Production	140,000	Tons
Sched Hrs Required	282.02	
Total Cost ($)	109,382	
Cost per Ton ($)	0.781	
Production per Year	992,825	Tons
Years Required	0.14	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	1,019	7	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.61	48.35	814.18
Fleet Tons per Operating Hour					814.18
x 89.66% Operator Efficiency =					730.02
x 68.00% Fleet Availability =					496.41

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	240	28,766	0.205
Haulers:	3	773F	1224	119.1	677	80,615	0.576
Totals	3				677	80,615	0.576
Fleet Totals	4				917	109,382	0.781

Fleet Production - Layback TP2 to A-dump

Fleet Estimates

Operating Schedule		
Operator Efficiency	92.89	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	455.95	Tons
Total Production	247,100	Tons
Sched Hrs Required	541.94	
Total Cost ($)	215,397	
Cost per Ton ($)	0.872	
Production per Year	911,906	Tons
Years Required	0.27	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	822	5.7	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	4.98	48.35	721.81
Fleet Tons per Operating Hour					721.81
x 92.89% Operator Efficiency =					670.52
x 68.00% Fleet Availability =					455.95

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	461	55,278	0.224
Haulers:	3	773F	1224	123.11	1,301	160,119	0.648
Totals	3				1,301	160,119	0.648
Fleet Totals	4				1,761	215,397	0.872

Fleet Production - Leach Pad TP 1&2 to heap

Fleet Estimates

Operating Schedule		
Operator Efficiency	90.33	%
Schedule Period	Year	
Scheduled Hours	2,000.00	
Fleet Estimates		
Fleet Availability	68	%
Production per Sched Hr	486.75	Tons
Total Production	402,700	Tons
Sched Hrs Required	827.33	
Total Cost ($)	328,620	
Cost per Ton ($)	0.816	
Production per Year	973,497	Tons
Years Required	0.41	

Theoretical Production

	Quantity	Model	Tons per Hour	Cycles per Hour	
1	1	988F	907		
2	3	773F	964	6.6	

Actual Production

	Quantity	Model	Cycles per Hour	Payload in Tons	Tons per Hour
1	3	773F	5.46	48.35	792.42
Fleet Tons per Operating Hour					792.42
x 90.33% Operator Efficiency =					715.81
x 68.00% Fleet Availability =					486.75

Cost

	Qty	Model	Machine Code	Hourly Cost Each Unit	Operating Hours	Total $	$ per Ton
Loaders	1	988F		120	703	84,387	0.21
Haulers:	3	773F	1224	123	1,986	244,233	0.606
Totals	3				1,986	244,233	0.606
Fleet Totals	4				2,689	328,620	0.816

Default Loader Data

Quantity	1
Model	992K
Tandem Loading	No
Bucket Type	RK SP TEETH/SEG
Bucket Capacity (CY)	16
Fill Factor (%)	95
Rated Load (Lbs)	42,000
Cycle Time (Minutes)	0.6
First Bucket Dump (Minutes)	0.1
Hauler Exchange	0.7
Hourly Cost ($)	200
Availability (%)	85

Default Hauler Data

	777G
Has Fuel Data	No
Quantity	4
Dump and Maneuver	1.2
Machine Code Identifier (opt.)	
Tire Size	27.00R49
Tire Type	E4
Speed Correction	1
Propulsion Correction	1
Retarding Correction	1
Retarding Margin (mph)	
Empty Weight (Lbs)	163,167
TMPH Limit (opt.)	
Payload Index (Lbs)	199,833.00
Body Volume (CY)	78.6
Hourly Cost ($)	170.65
Limited to Gear Availability (%)	85

Default Loader Data

Quantity	1
Model	988F
Tandem Loading	No
Bucket Type	RK SP TEETH/SEG
Bucket Capacity (CY)	8
Fill Factor (%)	95
Rated Load (Lbs)	24,000
Cycle Time (Minutes)	0.6
First Bucket Dump (Minutes)	0.1
Hauler Exchange	0.7
Hourly Cost ($)	120
Availability (%)	85

Default Hauler Data

	773F
Has Fuel Data	Yes
Quantity	3
Dump and Maneuver	1.2
Machine Code	1224
Identifier (opt.)	
Tire Size	24.00R35
Tire Type	E4
Speed Correction	1
Propulsion Correction	1
Retarding Correction	1
Retarding Margin (mph)	
Empty Weight (Lbs)	107,398
TMPH Limit (opt.)	
Payload Index (Lbs)	114,602.00
Body Volume (CY)	46.5
Hourly Cost ($)	85.45
Limited to Gear	
Availability (%)	80

Default Loader Data

Quantity	1
Model	988F
Tandem Loading	No
Bucket Type	RK SP TEETH/SEG
Bucket Capacity (CY)	8
Fill Factor (%)	95
Rated Load (Lbs)	24,000
Cycle Time (Minutes)	0.6
First Bucket Dump (Minutes)	0.1
Hauler Exchange	0.7
Hourly Cost ($)	120
Availability (%)	85

Default Hauler Data

	740 Tier 3
Has Fuel Data	No
Quantity	4
Dump and Maneuver	1.2
Machine Code	C271
Identifier (opt.)	
Tire Size	29.5R25
Tire Type	XADN
Speed Correction	1
Propulsion Correction	1
Retarding Correction	1
Retarding Margin (mph)	
Empty Weight (Lbs)	72,973
TMPH Limit (opt.)	
Payload Index (Lbs)	87,083.00
Body Volume (CY)	31.4
Hourly Cost ($)	101.12
Limited to Gear	
Availability (%)	75

Leach Pad TP 1&2 to Pad Center

Description:	Leachpad topsoil piles to heap
Material Quantity Tons:	402,700
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	300	2	0	25	Pile to haulroad
2	1,550.00	2	1	25	Haulroad to heap
3	1,300.00	2	10	25	Heap ramp
4	600	2	0	25	Heap runout
5					

Leach Pad TP 1&2 to Pad Center

Description:	Leachpad topsoil piles to heap
Material Quantity Tons:	402,700
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	300	2	0	25	Pile to haulroad
2	1,550.00	2	1	25	Haulroad to heap
3	1,300.00	2	10	25	Heap ramp
4	600	2	0	25	Heap runout
5					

B-dump TP 1&2 to B-dump upper

Description:	B-dump topsoil piles to B-dump upper
Material Quantity Tons:	241,900
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	300	2	0	25	Pile to haul ramp
2	1,500.00	2	10	25	Dump ramp
3	800	2	0	25	Dump runout
4					

K-dump clay to pad

Description:	K-dump mancos to heap
Material Quantity Tons:	402,700
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	400	2	-10	25	Pile to haulroad
2	2,100.00	2	1	25	Haulroad to heap
3	1,300.00	2	10	25	Heap ramp
4	600	2	0	25	Heap runout
5					

K-dump rock to heap

Description:	K-dump waste rock to heap
Material Quantity Tons:	805,400
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	400	2	-8	25	Pile to haulroad
2	2,100.00	2	0	25	Haulroad to heap
3	1,300.00	2	10	25	Heap ramp
4	600	2	0	25	Heap runout
5					

Layback TP1 to C2

Description:	Layback topsoil pile to C-dump extension
Material Quantity Tons:	59,100
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	300	2	0	25	Topsoil pile to haulroad
2	1,300.00	2	-1.4	25	Haulroad to intersection
3	2,600.00	2	3.5	25	Intersection to dump base
4	800	2	10	25	Dump ramp
5	400	2	0	25	Dump runout
6					

Layback TP1to C1

Description:	Layback topsoil pile to C-dump
Material Quantity Tons:	140,000
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	300	2	0	25	Pile to haulroad
2	1,400.00	2	-1.4	25	Haulroad to dump base
3	1,100.00	2	10	25	Dump ramp
4	600	2	0	25	Dump runout
5					

Layback TP2 to A-dump

Description:	Layback topsoil pile to A-dump
Material Quantity Tons:	247,100
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	500	2	0	25	Pile to haul road
2	650	2	4	25	Haul road
3	520	2	-4.8	25	Haul road
4	1,475.00	2	0	25	Haul road
5	1,500.00	2	-1.7	25	Haul road
6	750	2	10	25	Dump ramp
7	500	2	0	25	Dump runout
8					

Leach Pad TP 1&2 to Pad Center

Description:	Leachpad topsoil piles to heap
Material Quantity Tons:	402,700
Lbs per BCY:	3,203
Lbs per LCY:	2,545

	Distance (feet)	Rolling Resistance %	Grade Pct.	mph Limit	Description
1	300	2	0	25	Pile to haulroad
2	1,550.00	2	1	25	Haulroad to heap
3	1,300.00	2	10	25	Heap ramp
4	600	2	0	25	Heap runout
5					

LVMC Estimated Topsoil, Clay and Heap Rock Overliner Load & Haul Costs 11/6/2013

Course	Fleet*	Material Qty Tons	Haul feet	Return feet	Scheduled Hrs. Req.	Tons per Sched Hr	Total $	$ per Ton	$ per yd.^{3}
B-dump TP 1&2 to B-dump lower	(4) 777G	44,100	4,440	4,440	35	1,256	26,347	0.60	0.76
	(3) 777G	44,100	4,440	4,440	46	960	27,796	0.63	0.81
	(2) 777G	44,100	4,440	4,440	64	694	29,231	0.66	0.85
	(3) 773F	44,100	4,440	4,440	69	641	34,300	0.78	1.00
	(4) 740 w/988F	44,100	4,440	4,440	97	454	39,385	0.89	1.14
	(3) 773F w/988F	44,100	4,440	4,440	95	463	38,963	0.88	1.13
B-dump TP 1&2 to B-dump upper	(4) 777G	241,900	2,600	2,600	192	1,258	144,301	0.60	0.76
	(3) 777G	241,900	2,600	2,600	237	1,019	143,666	0.59	0.76
	(2) 777G	241,900	2,600	2,600	309	783	142,207	0.59	0.75
	(3) 773F	241,900	2,600	2,600	316	765	154,653	0.64	0.82
	(4) 740 w/988F	241,900	2,600	2,600	431	561	174,896	0.72	0.93
	(3) 773F w/988F	241,900	2,600	2,600	492	492	192,236	0.80	1.02
K-dump clay to pad	(4) 777G	402,700	4,400	4,400	315	1,279	236,295	0.59	0.75
	(3) 777G	402,700	4,400	4,400	404	997	244,312	0.61	0.78
	(2) 777G	402,700	4,400	4,400	556	725	255,705	0.64	0.81
	(3) 773F	402,700	4,400	4,400	581	694	287,107	0.71	0.91
	(4) 740 w/988F	402,700	4,400	4,400	864	466	350,242	0.87	1.11
	(3) 773F w/988F	402,700	4,400	4,400	845	477	338,642	0.84	1.08
K-dump rock to heap	(4) 777G	805,400	4,400	4,400	630	1,279	472,591	0.59	0.75
	(3) 777G	805,400	4,400	4,400	808	996	489,130	0.61	0.78
	(2) 777G	805,400	4,400	4,400	1,109	726	510,277	0.63	0.81
	(3) 773F	805,400	4,400	4,400	1,150	700	564,337	0.70	0.90
	(4) 740 w/988F	805,400	4,400	4,400	1,720	468	697,378	0.87	1.11
	(3) 773F w/988F	805,400	4,400	4,400	1,685	478	669,892	0.83	1.06
Layback TP1 to C2	(4) 777G	59,100	5,400	5,400	47	1,250	35,460	0.60	0.77
	(3) 777G	59,100	5,400	5,400	63	940	38,052	0.64	0.82
	(2) 777G	59,100	5,400	5,400	87	676	40,248	0.68	0.87
	(3) 773F	59,100	5,400	5,400	91	650	44,998	0.76	0.97
	(4) 740 w/988F	59,100	5,400	5,400	130	453	52,852	0.89	1.14
	(3) 773F w/988F	59,100	5,400	5,400	129	457	52,154	0.88	1.13
Layback TP1to C1	(4) 777G	140,000	3,400	3,400	109	1,290	81,430	0.58	0.74
	(3) 777G	140,000	3,400	3,400	135	1,036	81,772	0.58	0.75
	(2) 777G	140,000	3,400	3,400	179	781	82,454	0.59	0.75
	(3) 773F	140,000	3,400	3,400	183	765	88,132	0.63	0.81
	(4) 740 w/988F	140,000	3,400	3,400	245	572	99,268	0.71	0.91
	(3) 773F w/988F	140,000	3,400	3,400	282	496	109,382	0.78	1.00
Layback TP2 to A-dump	(4) 777G	247,100	5,895	5,895	197	1,257	147,469	0.60	0.76
	(3) 777G	247,100	5,895	5,895	260	950	157,384	0.64	0.82
	(2) 777G	247,100	5,895	5,895	361	685	166,054	0.67	0.86
	(3) 773F	247,100	5,895	5,895	378	653	183,936	0.74	0.95
	(4) 740 w/988F	247,100	5,895	5,895	545	454	220,826	0.89	1.14
	(3) 773F w/988F	247,100	5,895	5,895	542	456	215,397	0.87	1.12
Leach Pad TP 1&2 to Pad Center	(4) 777G	402,700	3,750	3,750	314	1,284	235,342	0.58	0.75
	(3) 777G	402,700	3,750	3,750	397	1,015	240,000	0.60	0.76
	(2) 777G	402,700	3,750	3,750	538	748	247,747	0.62	0.79
	(3) 773F	402,700	3,750	3,750	551	731	271,641	0.68	0.86
	(4) 740 w/988F	402,700	3,750	3,750	712	565	288,757	0.72	0.92
	(3) 773F w/988F	402,700	3,750	3,750	827	487	328,620	0.82	1.04

*all fleets are loaded with 992 loader unless otherwise noted.

LVMC Estimated Topsoil, Clay and Heap Rock Overliner Load & Haul Costs - Fleet Data 11/6/2013

Loader Data		Loader Data			
Quantity	1	Quantity	1		
Model	992K	Model	988F		
Tandem Loading	No	Tandem Loading	No		
Bucket Type	RK SP TEETH/SEG	Bucket Type	RK SP TEETH/SEG		
Bucket Capacity (CY)	16	Bucket Capacity (CY)	8		
Fill Factor (%)	95	Fill Factor (%)	95		
Rated Load (Lbs)	42,000	Rated Load (Lbs)	24,000		
Cycle Time (Minutes)	0.58	Cycle Time (Minutes)	0.6		
First Bucket Dump (Minutes)	0.1	First Bucket Dump (Minutes)	0.1		
Hauler Exchange	0.7	Hauler Exchange	0.7		
Hourly Cost ($)	200	Hourly Cost ($)	120		
Availability (%)	85	Availability (%)	85		
Hauler Data		Hauler Data		Hauler Data	
	777G		773F		740 Tier 3
Has Fuel Data	No	Has Fuel Data	Yes	Has Fuel Data	No
Quantity	4	Quantity	3	Quantity	4
Dump and Maneuver	1.2	Dump and Maneuver	1.2	Dump and Maneuver	1.2
Machine Code		Machine Code	1224	Machine Code	C271
Identifier (opt.)		Identifier (opt.)		Identifier (opt.)	
Tire Size	27.00R49	Tire Size	24.00R35	Tire Size	29.5R25
Tire Type	E4	Tire Type	E4	Tire Type	XADN
Speed Correction	1	Speed Correction	1	Speed Correction	1
Propulsion Correction	1	Propulsion Correction	1	Propulsion Correction	1
Retarding Correction	1	Retarding Correction	1	Retarding Correction	1
Retarding Margin (mph)		Retarding Margin (mph)		Retarding Margin (mph)	
Empty Weight (Lbs)	163,167	Empty Weight (Lbs)	107,398	Empty Weight (Lbs)	72,973
TMPH Limit (opt.)		TMPH Limit (opt.)		TMPH Limit (opt.)	
Payload Index (Lbs)	199,833.00	Payload Index (Lbs)	114,602.00	Payload Index (Lbs)	87,083.00
Body Volume (CY)	78.6	Body Volume (CY)	46.5	Body Volume (CY)	31.4
Hourly Cost ($)	170.65	Hourly Cost ($)	85.45	Hourly Cost ($)	101.12
Limited to Gear		Limited to Gear		Limited to Gear	
Availability (%)	85	Availability (%)	80	Availability (%)	75

Operating Cost Per Hour - CAT 773F				
		US Dollars		
Category		Parts	Labor	Total
Machine Estimate Life (Metered Hours)	40,000			
Machine Operating Cost per Hour:				
Fuel Unit Cost ($/Gal)	3.150			
Fuel Consumption (Gal/hr)	0.00			
Fuel		0.00		0.00
Number of Tires	6			
Tire Cost	9,700			
Tire Life (hours)	6,500			
Tires		8.95		8.95
Lube-Oil-Filters-Grease		5.00	3.50	8.50
Repairs		25.00	15.00	40.00
Undercarriage		0.00	0.00	0.00
Machine Operating Cost Per Hour		38.95	18.50	57.45
Note: Equipment cost per hour & per shift includes parts, consumables, and maintenance labor re				
Does not include operator's wages and burden.				
LVMC Average Burdened Operator Wage		0.00	28.00	28.00
Total Operating Cost Per Hour		38.95	46.50	85.45

10/17/2013

Operating Cost Per Hour - CAT 992K					
		US Dollars			
Category		Parts	Labor	Total	Notes
Machine Estimate Life (Metered Hours)	40,000				
Machine Operating Cost per Hour:					
Fuel Unit Cost ($/Gal)	3.150				2013 projected pricing
Fuel Consumption (Gal/hr)	24.50				LVMC actuals
Fuel		77.18		77.18	
Number of Tires	4				
Tire Cost	30,000				Actual average cost
Tire Life (hours)	8,000				Actual/projected service life from tire reports
Tires		15.00		15.00	
Lube-Oil-Filters-Grease		5.00	3.50	8.50	In-house estimate
Repairs		37.44	33.88	71.32	In-house estimate
Undercarriage		0.00	0.00	0.00	n/a
Machine Operating Cost Per Hour		134.62	37.38	172.00	
Note: Equipment cost per hour & per shift includes parts, consumables, and maintenance labor required to perform all minor service, repairs, and major rebuilds. Does not include operator's wages and burden.					
LVMC Average Burdened Operator Wage		0.00	28.00	28.00	
Total Operating Cost Per Hour		134.62	65.38	200.00	

10/17/2013

Operating Cost Per Hour - CAT 988F					
		US Dollars			
Category		Parts	Labor	Total	Notes
Machine Estimate Life (Metered Hours)	40,000				
Machine Operating Cost per Hour:					
Fuel Unit Cost ($/Gal)	3.150				2013 projected pricing
Fuel Consumption (Gal/hr)	12.00				LVMC actuals
Fuel		37.80		37.80	
Number of Tires	4				
Tire Cost	10,000				Actual average cost
Tire Life (hours)	8,000				Actual/projected service life from tire reports
Tires		5.00		5.00	
Lube-Oil-Filters-Grease		5.00	3.50	8.50	In-house estimate
Repairs		20.97	19.73	40.70	In-house estimate
Undercarriage		0.00	0.00	0.00	n/a
Machine Operating Cost Per Hour		68.77	23.23	92.00	
Note: Equipment cost per hour & per shift includes parts, consumables, and maintenance labor required to perform all minor service, repairs, and major rebuilds. Does not include operator's wages and burden.					
LVMC Average Burdened Operator Wage		0.00	28.00	28.00	
Total Operating Cost Per Hour		68.77	51.23	120.00	

Operating Cost Per Hour - CAT 777G or F				
		US Dollars		
Category		Parts	Labor	Total
Machine Estimate Life (Metered Hours)	40,000			
Machine Operating Cost per Hour:				
Fuel Unit Cost ($/Gal)	3.150			
Fuel Consumption (Gal/hr)	21.50			
Fuel		67.73		67.73
Number of Tires	6			
Tire Cost	15,000			
Tire Life (hours)	6,500			
Tires		13.85		13.85
Lube-Oil-Filters-Grease		5.00	3.50	8.50
Repairs		30.93	21.65	52.58
Undercarriage		0.00	0.00	0.00
Machine Operating Cost Per Hour		117.50	25.15	142.65

Note: Equipment cost per hour & per shift includes parts, consumables, and maintenance labor re
Does not include operator's wages and burden.

Operating Cost Per Hour - CAT 773F				
		US Dollars		
Category		Parts	Labor	Total
Machine Estimate Life (Metered Hours)	40,000			
Machine Operating Cost per Hour:				
Fuel Unit Cost ($/Gal)	3.150			
Fuel Consumption (Gal/hr)	0.00			
Fuel		0.00		0.00
Number of Tires	6			
Tire Cost	9,700			
Tire Life (hours)	6,500			
Tires		8.95		8.95
Lube-Oil-Filters-Grease		5.00	3.50	8.50
Repairs		25.00	15.00	40.00
Undercarriage		0.00	0.00	0.00
Machine Operating Cost Per Hour		38.95	18.50	57.45
Note: Equipment cost per hour & per shift includes parts, consumables, and maintenance labor re				
Does not include operator's wages and burden.				
LVMC Average Burdened Operator Wage		0.00	28.00	28.00
Total Operating Cost Per Hour		38.95	46.50	85.45

Operating Cost Per Hour - CAT 740				
		US Dollars		
Category		Parts	Labor	Total
Machine Estimate Life (Metered Hours)	40,000			
Machine Operating Cost per Hour:				
Fuel Unit Cost ($/Gal)	3.150			
Fuel Consumption (Gal/hr)	10.50			
Fuel		33.08		33.08
Number of Tires	6			
Tire Cost	6,500			
Tire Life (hours)	6,500			
Tires		6.00		6.00
Lube-Oil-Filters-Grease		2.94	2.06	5.00
Repairs		17.08	11.96	29.04
Undercarriage		0.00	0.00	0.00
Machine Operating Cost Per Hour		59.10	14.02	73.12
Note: Equipment cost per hour & per shift includes parts, consumables, and maintenance labor requ				
Does not include operator's wages and burden.				
LVMC Average Burdened Operator Wage		0.00	28.00	28.00
Total Operating Cost Per Hour		59.10	42.02	101.12

Reclamation Volume Calculations and FPC Input
Lisbon Valley Mining Co LLC
2013-2018 Bond Estimate

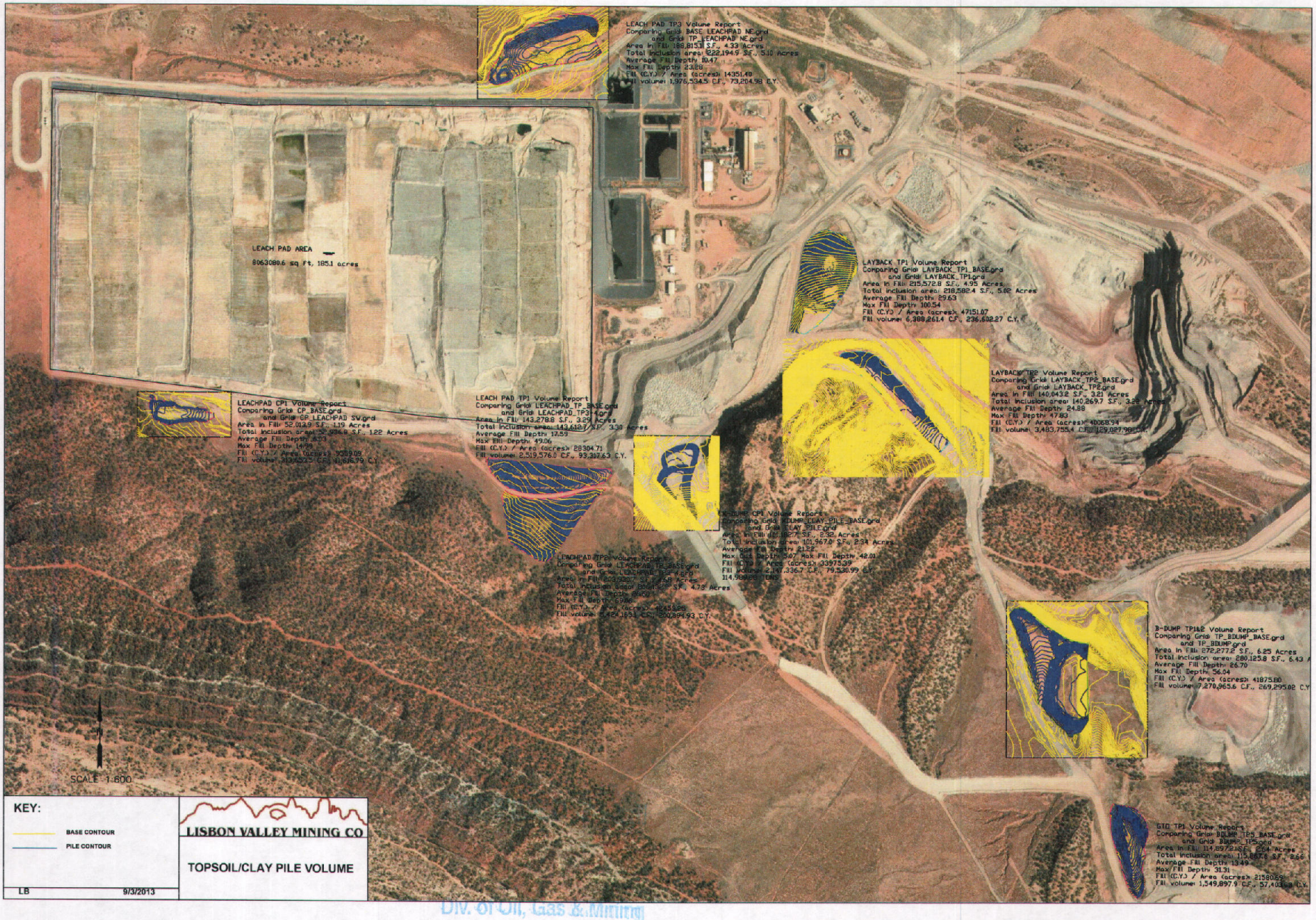
Area	Acres	Sq ft	Cu ft soil	Cu yd	Tons	5% slopes	Total Tons	Rounded FPC Input (Tons)
C1	64.6	2,812,669	2,812,669	104,828	134,180	6,709	140,889	140,000
C2	27.3	1,187,446	1,187,446	44,256	56,648	2,832	59,480	59,100
B1	111.5	4,858,682	4,858,682	181,083	231,786	11,589	243,376	241,900
B2	20.3	885,139	885,139	32,989	42,226	2,111	44,337	44,100
Leach Pad	185.7	8,089,092	8,089,092	301,480	385,895	19,295	405,190	402,700
Totals	**409.4**	**17,833,028**	**17,833,028**	**664,637**	**850,735**	**42,537**	**893,272**	**887,800**
Slopes +5%	**429.9**	**18,724,680**	**18,724,680**	**697,869**	**893,272**			
A Dump			5,211,432	192,823	247,060	Included	247,060	247,100
Surveyed Total Soil			28,613,154	1,058,687				
2013 Soil Liability			17,833,028	659,822				
Surplus			10,780,126	398,865				

Surveyed Soil and Clay Stockpiles
Lisbon Valley Mining Co LLC
2013

	Area	ft^3	yard^3	tons
Clay				
	Leach Pad CP1	313,654	11,617	14,869
	K-Dump CP1	2,147,337	79,531	101,800
Totals		2,460,990	91,148	116,669
Soil				
	Leach Pad TP1	2,519,576	93,318	119,447
	Leach Pad TP2	5,424,163	200,895	257,146
	Leach Pad TP3	1,976,535	73,205	93,702
	Lay Back TP1	6,388,261	236,602	302,851
	Lay Back TP2	3,483,755	129,028	165,156
	B-Dump TP1&2	7,270,966	269,295	344,698
	B-Dump TP2	1,549,898	57,404	73,477
Totals		28,613,154	1,059,746	1,356,475

Surveyed Soil and Clay Stockpiles
Lisbon Valley Mining Co LLC
2013

	Area	ft^3	yard^3	tons
Clay				
	Leach Pad CP1	313,654	11,617	14,869
	K-Dump CP1	2,147,337	79,531	101,800
Totals		2,460,990	91,148	116,669
Soil				
	Leach Pad TP1	2,519,576	93,318	119,447
	Leach Pad TP2	5,424,163	200,895	257,146
	Leach Pad TP3	1,976,535	73,205	93,702
	Lay Back TP1	6,388,261	236,602	302,851
	Lay Back TP2	3,483,755	129,028	165,156
	B-Dump TP1&2	7,270,966	269,295	344,698
	B-Dump TP2	1,549,898	57,404	73,477
Totals		28,613,154	1,059,746	1,356,475



LISBON VALLEY MINING CO

2013 Bond Worksheet
Lisbon Valley Mining Co
La Sal, Utah

ACTIVITY	AREA	QUANTITY	UNITS	$/Unit 2013	2013 Cost	2018 Cost
Waste Dump A- 120 acres						
Design area of top	287,560		SY			
Design area of slope	291,488		SY			
Grub footprint and harvest soil		193,500	CY			
Haul to Layback		193,500	CY			
Slope & roughen		579,048	SY	0.20	$ 115,810	
12 inches soil on top of dump		192,823	CY	0.76	$ 146,545	
12 inches soil on slope		192,823	CY	0.76	$ 146,545	
seed entire surface		120	acre	306	$ 36,720	
Total-waste dump "A" reclamation					$ 445,621	
Waste Dump B- 132 acres						
North Area B2	98,350		SY			
South area B1	540,000		SY			
Slope & roughen		638,350	SY	0.20	$ 127,670	
12 inches soil on top of dump		32,751	CY	0.76	$ 24,890	
12 inches soil on slope		179,820	CY	0.76	$ 136,663	
seed entire surface		132	acre	306	$ 40,392	
Total-waste dump "B" reclamation					$ 329,616	
Waste Dump C- 92 acres						
West Area C1	312,520		SY			
East area C2	132,000		SY			
ET CAP Area over former Sentinel East Pit	72,900		SY			
Slope & roughen north portions of C1		21,000	SY	0.20	$ 4,200	
ET CAP over former Sentinel East Pit		24,276	CY	0.74	$ 17,964	
12 inches soil on C1		104,069	CY	0.74	$ 77,011	
12 inches soil on C2		43,956	CY	0.77	$ 33,846	
seed entire surface		92	acre	306	$ 28,152	
Total-waste dump "C" reclamation					$ 161,173	
Rinse Heap- 12%of total ore neutralized; rinsing & evaporation for 18 months						
lime (2.5 lbs/ton)x($0.025/lb)x(4.5M ton)		4,500,000	ton	0.063	$ 283,500	
labor, power & pump for draindown &						
evaporation for 18 months		1	lot	446,640	$ 446,640	
Subtotal for heap rinse & evaporation					$ 730,140	
Heap Leach Pad - 185 Acres	913,375		SY			
area of the top	895,880		SY			
area of the slope	17,495		SY			
12 inches clay cap on top		295,640	CY	0.75	$ 221,730	
12 inches clay cap on slope		5,773	CY	0.75	$ 4,330	
24 inch crushed rock on top		600,240	CY	0.75	$ 450,180	
24 inch crushed rock on slope		11,722	CY	0.75	$ 8,791	
12 inches soil on top		295,640	CY	0.75	$ 221,730	
12 inches soil on top		5,773	CY	0.75	$ 4,330	
seed entire surface		185	acre	306	$ 56,610	
Subtotal- clay, crushed rock, soil & seeding for leach pad					$ 967,702	
Reclamation of Miscellaneous Areas						
Pond Area- 15.4 Acres	74,540		SY			
raffinate pond- crushed rock backfill		28,882	CY	0.75	$ 21,662	
12 inches soil on top		4,840	CY	0.75	$ 3,630	
PLS pond- crushed rock backfill		37,000	CY	0.75	$ 27,750	
12 inches soil on top		4,840	CY	0.75	$ 3,630	
ILS pond- crushed rock backfill		28,882	CY	0.75	$ 21,662	
12 inches soil on top		6,770	CY	0.75	$ 5,078	
E Stormwater pond- crushed rock backfill		55,500	CY	0.75	$ 41,625	
12 inches soil on top		8,380	CY	0.75	$ 6,285	
seed 4 pond areas		15.40	acre	306	$ 4,712	
Total-Pond Area reclamation					$ 136,033	
Plant & Crusher Area- 25.5 Acres	123,420		SY			
apply 12 inches soil		40,729	CY	0.75	$ 30,546	
seed entire plant area		25.5	acre	306	$ 7,803	
Total- Plant Area Reclamation					$ 38,349	
Haul Roads- 47 Acres						
scarify		227,500	SY	0.20	$ 45,500	
contour		75,075	CY	0.75	$ 56,306	
apply 12 inches soil		75,075	CY	0.75	$ 56,306	
seed entire area		40	acre	306	$ 12,240	
Total- Plant Reclamation Area					$ 170,353	
Power Line Corridor- 64 Acres						
*note the power company has requested the line remain open		64	acre	n/c	$ -	
Reseed Soil Stockpile Areas- 40 Acres						
reseed 40 acres		40	acre	306	$ 12,240	
Total- Reseed Soil Stock Pile Areas					$ 12,240	
Fences & Berms Around Open Pits						
fence around Sentinel Pit 1		5,620	LF	6.00	$ 33,720	
fence around Sentinel Pit 2		2,140	LF	6.00	$ 12,840	
fence around Centennial Pit		8,980	LF	6.00	$ 53,880	
fence around GTO Pit		7,410	LF	6.00	$ 44,460	
Total - Pit Fences					$ 144,900	
Surface Drainage Diversion Ditches						
leach pad area		7,473	CY	0.75	$ 5,605	
plant area		1,595	CY	0.75	$ 1,196	
crusher area		1,810	CY	0.75	$ 1,358	
dump areas		13,668	CY	0.75	$ 10,251	
Total-Drainage Diversion Ditches					$ 18,410	
Water Line						
12 inches soil on top		7,582	CY	0.75	$ 5,687	
seed entire surface		4.7	acre	240	$ 1,128	
Total-Drainage Diversion Ditches					$ 6,815	
Drill Pads and Boreholes						
Centennial Recess Drilling		23	pads	350	$ 8,050	
Other Miscellaneous Areas						
Direct Costs						
Mobilization and Demobilization		1	lot	35,000	$ 35,000	
Leach Pad & Waste Dumps		combined total of previous items			2,634,251	
Misc. Surface Areas		combined total of previous items			535,149	
Plugging monitoring wells						
35 Wells		35	wells	3500.00	$ 122,500	
Plant Dismantling						
assumes no salvage value		1	lot	310,000	$ 310,000	
Total Direct Costs					$ 3,636,900	$ 3,917,974
Indirect Costs						
Engineering- 5% of total direct costs		1	lot	181,845	$ 181,845	$ 195,899
Water Quality Monitoring and Reporting 11 Wells 5 years Consultant		5	year	30,000	$ 150,000	$ 161,593
Water Quality Monitoring 11 Wells 5 Years Lab (500/sample)		5	year	22,000	$ 110,000	$ 118,501
Revegetation monitoring for 5 years		5	year	5,000	$ 25,000	$ 26,932
Construction management		1	lot	180,199	$ 180,199	$ 194,126
Contingency (10% of Total Direct Costs)		1	lot	363,690	$ 363,690	$ 391,797
Total Indirect Costs				$ 1,010,734	$ 1,010,734	$ 1,088,848
Total Costs					$ 4,647,634	$ 5,006,822

Total Bond 2013	4,647,634
Total Bond 2018	5,006,822
Existing Bond	6,076,888
Adjustment for 2013	1,429,254
Adjustment for 2018	1,070,066

Lisbon Vall M/037/0088
Surety Esc ########

	Percentage increase/y	Surety amount in <year> dollars		
2001	4.21%	1.0421		
2002	2.02%	1.0202	$0.00	
2003	1.71%	1.0171	$0.00	
2004	0.84%	1.0084	$0.00	
2005	3.99%	1.0399	$0.00	
2006	5.44%	1.0544	$0.00	
2007	2.12%	1.0212	$0.00	
2008	-3.40%	0.966	$0.00	
2009	2.90%	1.029	$0.00	
2010	1.80%	1.018	$0.00	
2011	2.90%	1.029	$0.00	
2012	3.40%	1.034	$0.00	
2013	1.50%	1.015	$4,647,633.86	Average of previous five years
2018			$5,006,821.62	
Rounded to nearest $100			$4,647,600.00	

Note: The surety amount is listed in the row of the year in which it was calculated.
The escalation factor for a year is applied to the surety amount to take it to the next year.

Lisbon Vall M/037/0088

Surety Esc	June 17, 2013			
	Percentage increase/year		Surety amount in <year> dollars	
2001	4.21%	1.0421		
2002	2.02%	1.0202	$0.00	
2003	1.71%	1.0171	$0.00	
2004	0.84%	1.0084	$0.00	
2005	3.99%	1.0399	$0.00	
2006	5.44%	1.0544	$0.00	
2007	2.12%	1.0212	$5,006,821.62	
2008	-3.40%	0.966	$5,112,966.24	
2009	2.90%	1.029	$4,939,125.38	
2010	1.80%	1.018	$5,082,360.02	
2011	2.90%	1.029	$5,173,842.50	
2012	3.40%	1.034	$5,323,883.93	
2013	1.50%	1.015	$5,504,895.99	Average of previous fiv
2018			$5,930,336.39	
Rounded to nearest $100			$5,504,900.00	

Note: The surety amount is listed in the row of the year in which it was calculated.
The escalation factor for a year is applied to the surety amount to take it to the next year.

LISBON VALLEY MINING CO

Ms. Rebecca Doolittle
US Bureau of Land Management
82 East Dogwood
Moab Utah 84532

December 3, 2013

Comment [LI1]:

Mr. Wayne Western
Utah Division of Oil, Gas, & Mining
1594 West North Temple Suite 1210
Salt Lake City, UT 84114-5801

Re: Large Mining Operations Reclamation Bond Estimate
Lisbon Valley Mining Co., DOGM File M/037/088

Dear Becky and Wayne:

The Lisbon Valley Mining Co., LLC (LVMC) has prepared the attached reclamation bond package in accordance with the results of the meeting conducted 10-19-13. A documentation of the meeting is included here for background.

October 19, 2013 Meeting Agenda

LVMC intended the meeting to be a working session. In attendance were Paul Baker (DOGM), Mike Bradley (DOGM), Wayne Western (DOGM), Rebecca Doolittle (BLM), Ken Ezpeleta (LVMC), and Lantz Indergard (LVMC).

The objective was to present the current mine expansion, compare this with conditions in 2009, and frame the 2013 estimate. LVMC prepared for the meeting by printing copies of the spreadsheet used to authorize the bond in 2009, editing this spreadsheet to reflect current changes, and preparing an aerial site map. The meeting included a review of the site map, mine tour, and work session.

The following changes were presented.

- Expanded Waste Dumps B and C
- Additional ore on leach pad
- Elevated haul road/waste rock stockpile
- Topsoil stockpiles
- Clay stockpiles
- Concurrent reclamation on Dumps B and C
- Reclamation of primary crusher
- Expanded haul road from the GTO pit

Approved 2009 Bond Spreadsheet

As stated, LVMC reflected these changes on the same cost spreadsheet DOGM used to approve the bond in 2009. Both the approved (2009) version and the proposed (2013) version were distributed as hand out material. LVMC's intent was to go through each line item of the spreadsheet and review changes in accordance with the mine expansion presented the same day.

The 2013 version reflected a 50% unit cost reduction for stockpiling clay and waste rock next to the leach pad for final reclamation purposes. LVMC corroborated this change during the site tour as a function of documented real time truck and loader cycle times. The remaining unit costs (topsoil) remained unchanged.

Extended Leach Pad Drain Down

The group discussed the efficacy of converting the storm water pond to a wetlands cell to facilitate long-term heap leach drain down. Since it is not known when the drain down period will go to zero, LVMC proposed an alternative to treat minor long term seepage from the pad using artificial wetlands treatment. This would mean leaving the storm water pond in place. LVMC intends to resume the discussion over time.

Unit Costs for Earthmoving

The work session ended after DOGM recommended a re-evaluation of the historically-approved unit costs for earth moving. BLM agreed with DOGM's recommendation, and expressed additional recommendations to revise the method of calculating indirect costs.

The earth moving costs questioned by DOGM are the same primary unit costs (soil, clay, and rock) used to approve the bond in 2009. These costs were derived for the original Plan of Operations by a 3rd Party, the Winters Group in 1997. LVMC is pleased with DOGM's current guidance since LVMC has challenged these unit costs since 2008 without success in the bonding process. LVMC stated its assumption that elevated costs comprised a necessary cushion for a

regulatory bond estimate. DOGM reiterated its recommendations to re-evaluate the actual costs with a clarifying statement "the bond is the bond" with no reason for regulatory inflation.

2013 CAT^{Tm} Fleet Production and Cost Program

In response to agencies' direction, LVMC has completed an industry-standard engineering analysis and re-evaluation of the primary earth moving costs using CAT's Fleet Production and Costs (FPC) program.

FPC is a PC software tool designed to estimate the productivity, cost, and time required for a wide variety of earthmoving or other material handling operation's moving material from one location to another over one or more courses.

FPC takes in to account the following factors

- Haul road condition/gradients/rolling resistance/distances
- Speed limits and waiting times
- Machine availability/bucket fill factor/cycle times
- Material Densities
- Required Volumes
- Operator Efficiency

This program has allowed LVMC to evaluate each reclamation haul using a combination of truck/loader fleets currently owned and operated by LVMC. LVMC evaluated 8 individual hauls using 6 different fleet combinations. The details of this analysis are included and packaged along with a revised bond calculation. An electronic version has been made available for 3rd Party review.

In addition, LVMC has obtained current cost backup and written quotes for reclamation of miscellaneous areas. This includes the ponds area, fences, haul roads, wells abandonment, and post-mine groundwater monitoring. The backup information is included as a series of attachments. Also included as an attachment is the engineered 5-year forecast of total tons to the pad.

In summary, the reclamation bond package includes the following:

1. Site map of primary reclamation areas.
2. Surveyed reclamation stockpiles.
3. Required reclamation volumes and FPC input.
4. CAT [Tm] FPC analysis of primary reclamation hauls (including fpc4 electronic file)
5. 5-yr forecast of total tons to the leach pad.
6. Current aerial seeding cost.
7. Wells abandonment estimate and backup.
8. Plant demolition estimate and backup.
9. Groundwater monitoring cost and backup.
10. Revised bond spreadsheet.

LVMC appreciates the agencies ongoing support and looks forward to finalizing the mine bond as soon as possible.

Comment [LI2]:

Sincerely,

Lantz Indergard, P.G.
Environmental and Exploration Manager
Lisbon Valley Mining Co LLC
435 686 9950 #107
Lindergard@lisbonmine.com